UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/944,776	08/31/2001	Andrej Kocev	15311-2310	1813

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EXAMINER
PHAM, THOMAS K

ART UNIT	PAPER NUMBER
2121	

DATE MAILED: 06/06/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 07-01)

Office Action Summary	**Application No.** 09/944,776	**Applicant(s)** KOCEV ET AL.
	Examiner Thomas K Pham	**Art Unit** 2121

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _31 August 2001_ .

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-10_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-10_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

    If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

        1.☐ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____ .

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

14)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

    a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4)☐ Interview Summary (PTO-413) Paper No(s). _____ .
5)☐ Notice of Informal Patent Application (PTO-152)
6)☐ Other: _____

Notice to Applicant(s)

1.   Claims 1-10 of U.S. Application 09/944776 filed on 08/31/2001 are presented for

examination.

DETAILED ACTION

Claim Rejections - 35 USC § 103

2.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3.   Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kurtzberg et

al. U.S. Patent No. 6,360,263 (hereinafter Kurtzberg) in view of DeJager et al. U.S. Patent No.

6,473,424 (hereinafter DeJager).

4.   As for claim 1, Kurtzberg teaches a method for programmably allocating system

resources to accommodate a multiprocessor computer system comprising the steps of:

determining the number and type of transactions (col. 1 lines 57-58), determining the number

and type of devices being serviced (col. 2 lines 51-55). Kurtzberg does not specifically teach a

method for programmably allocating system resources to accommodate I/O transactions at I/O

ports comprising the steps of: setting criteria for transactions at the port with respect to the

number and type of transactions and devices, assigning the system resources to the port with

respect to the criteria. However, DeJager teaches a method for programmably allocating system

resources to accommodate I/O transactions at I/O ports (col. 2 lines 50-56) comprising the steps

of: setting criteria for transactions at the port with respect to the number and type of transactions

and devices (col. 3 lines 21-24), assigning the system resources to the port with respect to the

criteria (col. 3 lines 24-32). It would have been obvious to one of ordinary skill in the art at the

time the invention was made to combine the I/O ports allocating system of resources of DeJager

with the allocating system of Kurtzberg because it would provide for adjusting the criteria

respect to the loads or transactions at I/O ports in order to optimize the load distribution

depending upon each port's current utilization.

5.   As for claim 2, Kurtzberg does not specifically teach the method as defined in claim 1

further comprising the steps of: providing at least one control register for each port, wherein the

control register includes a plurality of programmable fields. However, DeJager teaches the

method providing at least one control register for each port, wherein the control register includes

a plurality of programmable fields (col. 7 lines 14-18). It would have been obvious to one of

ordinary skill in the art at the time the invention was made to combine the I/O ports allocating

system of resources of DeJager with the allocating system of Kurtzberg because it would provide

for using one control register per port in order to determine the least utilized queue for additional

load allocation at the port.

6.   As for claim 3, Kurtzbert does not specifically teach the method as defined in claim 2

further comprising the steps of configuring the control register fields to contain a number of

direct memory access engines available at a port to support a transaction, a number of cache lines

for requested data, and a number representing priorities among the anticipated transactions.

However, DeJager teaches the method comprising the steps of configuring the register fields to

have a buffering capacity available at a port to support a transaction (col. 8 lines 39-43), and a

process of comparing queue numbers to determine a number representing priorities among the

anticipated transactions (col. 7 lines 31-37). It would have been obvious to one of ordinary skill

in the art at the time the invention was made to combine the I/O ports allocating system of

resources of DeJager with the allocating system of Kurtzberg because it would provide for

configuring the register fields to have a buffering capacity and a number representing priorities

in order to balance the loads more effectively at the I/O ports.

7.   Claims 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kurtzberg in

view of DeJager and in further view of Wallach et al. U.S. Patent No. 6,173,346 (hereinafter

Wallach).

8.   As for claim 4, Kurtzbert and DeJager do not specifically teach the method as defined in

claim 1 further comprising the step of preparing for hot swapping an assembly, wherein the

preparing for hot swapping comprises, with respect to the assembly being replaced, copying the

assembly's state, the state of its associated memory systems, its status and control registers, and

the contents of its cache and memory systems. However, Wallach teaches the method comprising

the step of preparing for hot swapping an assembly comprising: copying the assembly's state by

removing the old assembly and program a new assembly to have at least the configuration

associated with the configuration information as on the removed portion (col. 8 lines 24-37). It

would have been obvious to one of ordinary skill in the art at the time the invention was made to

combine the hot swapping assembly of Wallach with the allocating system of Kurtzberg and

DeJager because it would provide for preparing the hot swapping of an assembly by transferring

the old configuration information into the new assembly before the assembly is hot swapped in

order to prevent any lost of information.

9.   As for claim 5, Kurtzbert and DeJager do not specifically teach the method as defined in claim 4 wherein the copying comprises the steps of: flushing the data in the local cache and local memory to storage not affected by the hot swapping, invalidating data in cache, setting a flush indicator in the port's cache status and control register, flushing directory data to non-affected storage, finding and stopping any new transactions, completing any transactions already started or pending, flushing the translation look-aside buffers, invalidating the contents of the translation look-aside buffers, and updating the system directory. However, Wallach teaches the method of copying comprises the steps of: removing the old assembly and program a new assembly to have at least the configuration associated with the configuration information as on the removed portion (col. 8 lines 24-37), finding and suspending I/O state to freeze the old assembly (col. 18 lines 49-52), completing any pending transactions (col. 18 line 59 to col. 19 line 17), flushing old configuration of the old assembly (col. 8 lines 33-37). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the hot swapping assembly of Wallach with the allocating system of Kurtzberg and DeJager because it would provide for copying the old configuration of an assembly by transferring the old information into the new assembly before the assembly is hot swapped in order to maintain the same state of operation without any lost of information.

10.   Claims 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kurtzberg et al. U.S. Patent No. 6,360,263 (hereinafter Kurtzberg) in view of DeJager et al. U.S. Patent No. 6,473,424 (hereinafter DeJager).

11.   As for claim 6, Kurtzberg teaches a system for allocating system resources to

accommodate of a multiprocessor computer system comprising: the number and type of

transactions anticipated at a port (col. 1 lines 57-58), number and type of devices being serviced

via the port (col. 2 lines 51-55). Kurtzberg does not specifically teach a system for allocating

system resources to accommodate I/O transactions at I/O ports of a multiprocessor computer

system comprising: criteria for operations at the port with respect to the number and type of

transactions and devices, means for assigning the system resources to the port with respect to the

criteria. However, DeJager teaches a system for allocating system resources to accommodate I/O

transactions at I/O ports of a multiprocessor computer system (col. 2 lines 50-56) comprising:

criteria for operations at the port with respect to the number and type of transactions and devices

(col. 3 lines 21-24), means for assigning the system resources to the port with respect to the

criteria (col. 3 lines 24-32). It would have been obvious to one of ordinary skill in the art at the

time the invention was made to combine the I/O ports allocating system of resources of DeJager

with the allocating system of Kurtzberg because it would provide for adjusting the criteria

respect to the loads or transactions at I/O ports in order to optimize the load distribution

depending upon each port's current utilization.

12.   As for claim 7, Kurtzberg does not specifically teach the system as defined in claim 6

further comprising: at least one control register for each port, wherein the control register

includes a plurality of programmable fields. However, DeJager teaches the system comprising: at

least one control register for each port, wherein the control register includes a plurality of

programmable fields (col. 7 lines 14-18). It would have been obvious to one of ordinary skill in

the art at the time the invention was made to combine the I/O ports allocating system of

resources of DeJager with the allocating system of Kurtzberg because it would provide for using

one control register per port in order to determine the least utilized queue for additional load

allocation at the port.

13.   As for claim 8, Kurtzberg does not specifically teach the system as defined in claim 7

wherein the control register fields include a number of direct memory access engines available at

a port to support a transaction, a number of cache lines for requested data, and a number

representing priorities among the anticipated transactions. However, DeJager teaches the system

wherein the register fields is configured to have a buffering capacity available at a port to support

a transaction (col. 8 lines 39-43), and a process of comparing queue numbers to determine a

number representing priorities among the anticipated transactions (col. 7 lines 31-37). It would

have been obvious to one of ordinary skill in the art at the time the invention was made to

combine the I/O ports allocating system of resources of DeJager with the allocating system of

Kurtzberg because it would provide for configuring the register fields to have a buffering

capacity and a number representing priorities in order to balance the loads more effectively at the

I/O ports.

14.   Claims 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kurtzberg in

view of DeJager and in further view of Wallach et al. U.S. Patent No. 6,173,346 (hereinafter

Wallach).

15.   As for claim 9, Kurtzberg and DeJager do not specifically teach the method as defined in

claim 6 further comprising: means for hot swapping of an assembly, including means for

copying the assembly's state, the state of its associated memory systems, its status and control

registers, and the contents of its cache and memory systems. However, Wallach teaches the

method comprising: means for hot swapping an assembly, including means for copying the

assembly's state by removing the old assembly and program a new assembly to have at least the

configuration associated with the configuration information as on the removed portion (col. 8

lines 24-37). It would have been obvious to one of ordinary skill in the art at the time the

invention was made to combine the hot swapping assembly of Wallach with the allocating

system of Kurtzberg and DeJager because it would provide for hot swapping an assembly by

transferring the old configuration information into the new assembly before the assembly is hot

swapped in order to prevent any lost of information.

16.   As for claim 10, Kurtzberg and DeJager do not specifically teach the system as defined in

claim 9 wherein the means for copying comprises: means for flushing the data in the local cache

and local memory to storage not affected by the hot swapping, means for flushing, modifying

and invalidating unmodified data in cache, means for setting a flush indicator in the port's cache

status and control register, means for flushing directory data to non-affected storage, means for

finding and stopping any new transactions, means for completing any transactions already started

or pending, means for flushing the translation look-aside buffers, means for invalidating the

contents of the translation look-aside buffers, and means for updating the directory. However,

Wallach teaches the system wherein copying comprises: removing the old assembly and program

a new assembly to have at least the configuration associated with the configuration information

as on the removed portion (col. 8 lines 24-37), finding and suspending I/O state to freeze the old

assembly (col. 18 lines 49-52), completing any pending transactions (col. 18 line 59 to col. 19

line 17), flushing old configuration of the old assembly (col. 8 lines 33-37). It would have been

obvious to one of ordinary skill in the art at the time the invention was made to combine the hot

swapping assembly of Wallach with the allocating system of Kurtzberg and DeJager because it

would provide for copying the old configuration of an assembly by transferring the old

information into the new assembly before the assembly is hot swapped in order to maintain the

same state of operation without any lost of information.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner Thomas Pham; whose telephone number is (703) 305-7587 and fax number is (703) 746-8874. The examiner can normally be reached on Monday-Friday from 7:30AM- 4:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, *John Follansbee*, can be reached on *(703) 305-8498 or via e-mail addressed to [joh.follansbee@uspto.gov]*. Any response to this office action should be mailed to: **Director of Patents and Trademarks Washington, D.C. 20231**, or **Hand-delivered** responses should be brought to **Crystal Park II, 2121 Crystal Drive Arlington, Virginia, (Receptionist located on the 4th floor)**, or **faxed.** The following **fax numbers** apply:

Official	**(703) 746 - 7239**
Non Official/ Draft	**(703) 746 - 7240**
After Final	**(703) 746 - 7238**

Communications via Internet e-mail regarding this application, other than those under 35 U.S.C. 132 or which otherwise require a signature, may be used by the applicant and should be addressed to **[thomas.pham@uspto.gov]**.

All Internet e-mail communications will be made of record in the application file. PTO employees do not engage in Internet communications where there exists a possibility that sensitive information could be identified or exchanged unless the record includes a properly signed express waiver of the confidentiality requirements of 35 U.S.C. 122. This is more clearly set forth in the Interim Internet Usage Policy published in the Official Gazette of the Patent and Trademark on February 25, 1997 at 1195 OG 89.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-3900.

Thomas K. Pham
Patent Examiner

JOHN FOLLANSBEE
SUPERVISORY PATENT EXAMINER
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